

### CLAIMS

1. Method of controlling data traffic in a telecommunications network (150) using a statistical model (D-BIND, S-BIND) of the traffic transmitted by the network (150) and a Gaussian distribution of the data bit rate, in which method a value  $(\mu, \sigma)$  characteristic of said Gaussian distribution is weighted by a parameter  $\gamma$  varying as a function of the intensity of the variations, also known as the burstiness, of the traffic processed by the network (150) and said weighted value  $(\mu', \sigma)$  is used to evaluate the traffic in the network, which method is characterized in that the weighting parameter  $\gamma$  is defined by means of an average value  $\lambda_{avg}$  of the data bit rate and a maximum value  $\lambda_{peak}$  of the data bit rate over a given period.

2. Method according to claim 1 characterized in that the weighting parameter  $\gamma$  is defined as the ratio of the average value  $\lambda_{avg}$  of the data bit rate to the maximum value  $\lambda_{peak}$  of the data bit rate:

$$\gamma = \frac{\lambda_{avg}}{\lambda_{peak}}$$

3. Method according to claim 1 or claim 2 characterized in that the average value  $\lambda_{avg}$  of the data bit rate is measured over a predetermined period during which the maximum value  $\lambda_{peak}$  of the data bit rate is determined.

4. Method according to claim 2 or claim 3 characterized in that the average value  $\mu$  of the Gaussian distribution is weighted, for example by means of a formula such as:

$$\mu' = (1 - \gamma)(\mu - \lambda_{avg}) + \lambda_{avg}$$

5. Method according to any one of the preceding claims characterized in that a model of the data traffic is used involving pairs of values

$$\{(R_k, l_k) \mid k = 1, \dots, p\}$$

in which  $l_k$  is a interval,  $p$  is a variable generally having a value from 4 to 8 and  $R_k$  is the maximum data bit rate that a given data stream can send during that interval  $l_k$  such that, the maximum data bit rate  $R_k$  for the stream  $j$  is defined as follows:

$$R_k = \max_{0 \leq t} \left( \frac{A_j[t, t + l_k]}{l_k} \right)$$

where  $A_j[t_1, t_2]$  represents the total number of bits sent by the data stream ( $j$ ) concerned between the times  $t_1$  and  $t_2$ .

6. Method according to claim 5 characterized in that a data stream is modeled by a series of positive real numbers

$$\{X_{t1}, X_{t2}, \dots, X_{tN}\}$$

obtained from a function  $b(t)$  generated by means of pairs of values  $\{(R_k, l_k) \mid k = 1, \dots, p\}$ , for example in accordance with a formula such as:

$$b(t) = \frac{R_k l_k - R_{k-1} l_{k-1}}{l_k - l_{k-1}} (t - l_{k-1}) + R_{k-1} l_{k-1}, \quad l_{k-1} \leq t \leq l_k$$

7. Method according to claim 6, characterized in that a confidence level  $\varepsilon$  is defined using a random variable  $S_k$  specific to the distribution of the data stream bit rate concerned during an interval  $l_k$  by associating with it a probability density function  $s_k(a)$  defined as follows:

$$S_k(a) = \text{prob}\left(\frac{A_j[t, t + l_k]}{l_k} \leq a\right), \quad \forall t \geq 0$$

and then defining the value  $R_k$  for each interval  $l_k$  as follows:

$$\int_0^{R_k} S_k(t) dt = \varepsilon$$

where  $0 < \varepsilon \leq 1$ .

8. Method according to any one of the preceding claims characterized in that data traffic control is used to decide whether to admit into the network a data stream relating, for example, to multimedia information such as a conversation, a videoconference, a picture and/or a sequence of pictures coded in accordance with the MPEG protocol, for example.

9. Device for controlling data traffic in a telecommunications network (150) using a statistical model (D-BIND, S-BIND) of the traffic transmitted by the network (150) and a Gaussian distribution of the data bit rate, which device is characterized in that it comprises means for executing a method according to any one of the preceding claims to weight a value  $(\mu, \sigma)$  characteristic of said Gaussian distribution by a parameter  $\gamma$  varying as a function of the intensity of the variations, also known as the burstiness, of the traffic processed by the network (150) and said weighted value  $(\mu', \sigma)$  is used to evaluate the traffic in the network.